SUPPLEMENTARY DATA

Evaluation and treatment of floodwater at Vietnamese Mekong Delta using a simple filter system based on the silver nanoparticles coated onto activated carbon derived from rice husk

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Table S1. Comparison of water quality indicators of the floodwater before and after treatment with standard values recommended by the World Health Organization (WHO) and by the National Technical Regulation on Domestic Water Quality of Vietnam (QCVN 01: 2009/BYT).

Water quality indicators	**Initial floodwater**	**Pre-treated floodwater**	**Post-treated floodwater**	**QCVN 01: 2009/BYT**	**WHO**
pH	6.6 – 7.3	6.90 – 6.95	7.0 – 7.16	6.5 – 8	6.5 – 8
Turbility, NTU	93 – 181	6.00 – 10.9	0.23 – 0.42	< 2	<5
TDS, mg/L	90 – 109	88.33 – 77.33	53.10 – 53.22	< 1000	<500
SS, mg/L	68 – 137	0 – 15.76	0	<25	<25
Color, Pt-Co	460 – 463	31.76 – 115.67	0	<15	<15
Total coliform, MPN/100mL	1500 – 25000	23300 – 23700	No detect	No detect	No detect
Fecal coliform, MPN/100mL	280 – 2800	1310 – 1487	No detect	No detect	No detect

Table S2. The average estimated cost of chemicals to treat one cubic meter of floodwater using silver nanoparticles coated onto activated carbon

Chemicals	Content	Cost, $
$AgNO_3$	0.085 g	0.060
$C_6H_5O_7Na_3$	0.150 g	0.011
Rice husk	150 g	-
N_2	25 L	0.062
CO_2	12.5 L	0.009
PAC	20 g	0.007
Quartz sand	197.8 g	0.018
Total		0.167

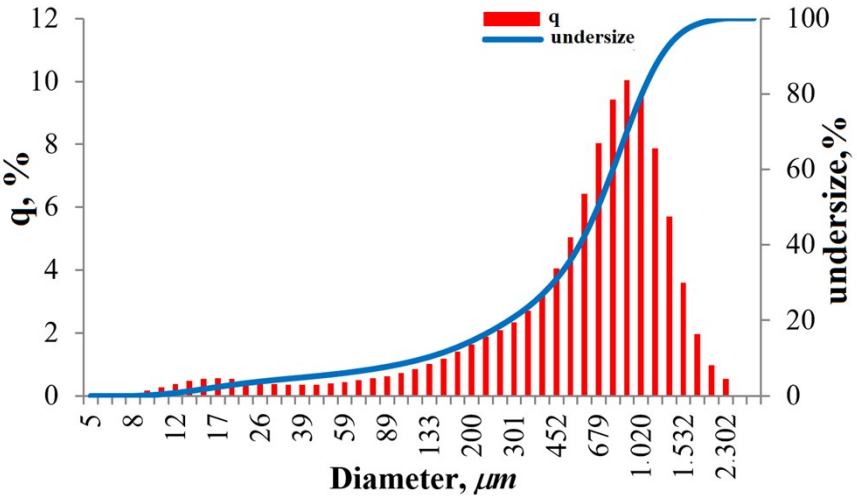

Figure S1. The particle size distribution of the obtained AC

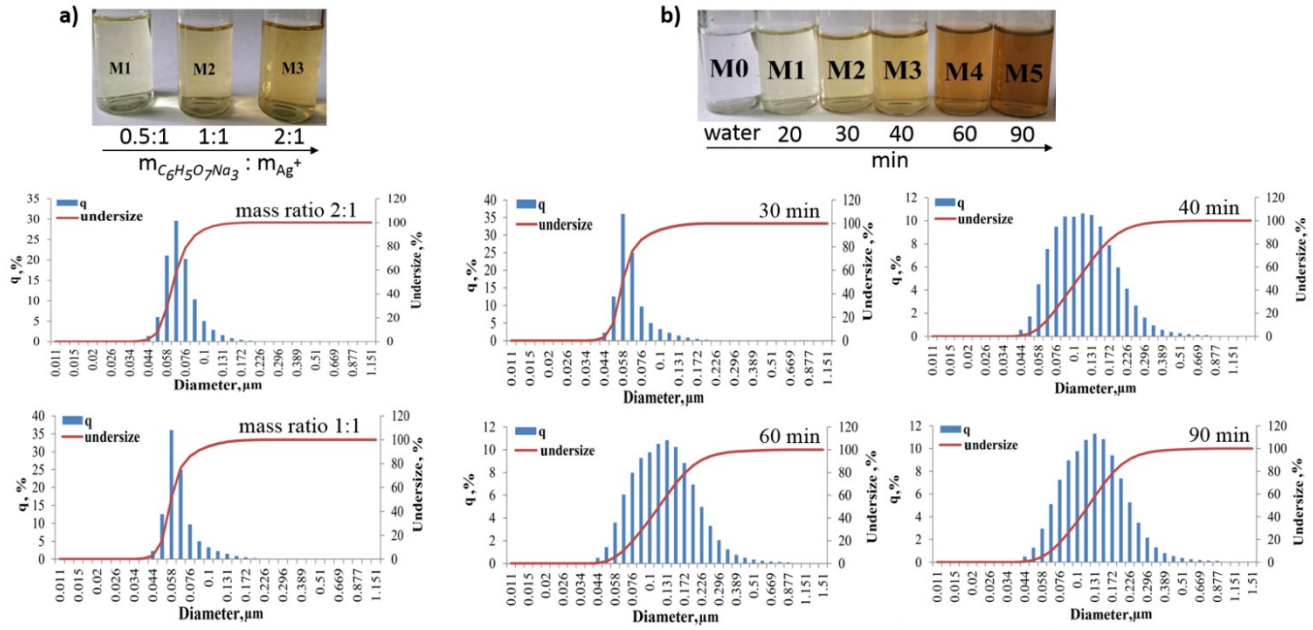

Figure S2. DLS size distribution histograms of silver nanoparticles synthesized with different reagent dosages (a) and reaction times (b)

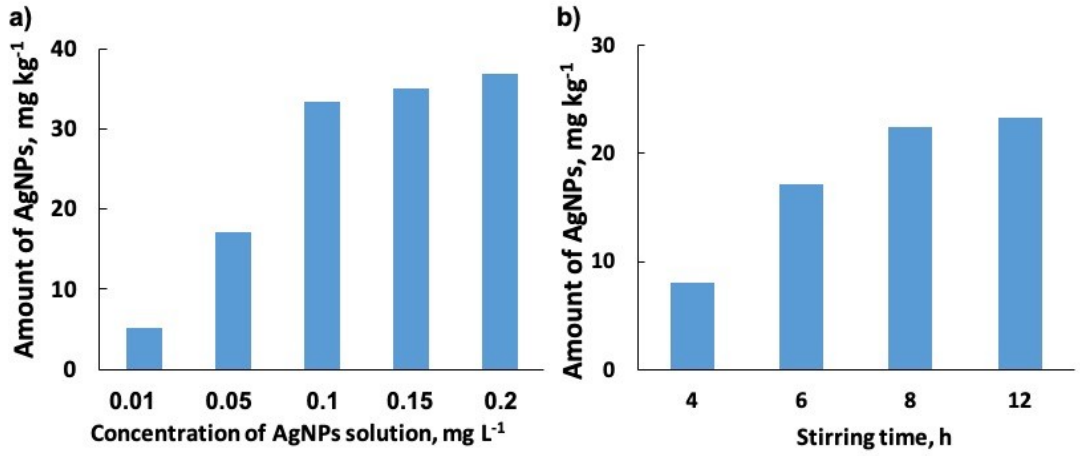

Figure S3 Effect of AgNPs concentration (a) and stirring time (b) on AgNPs@AC formation

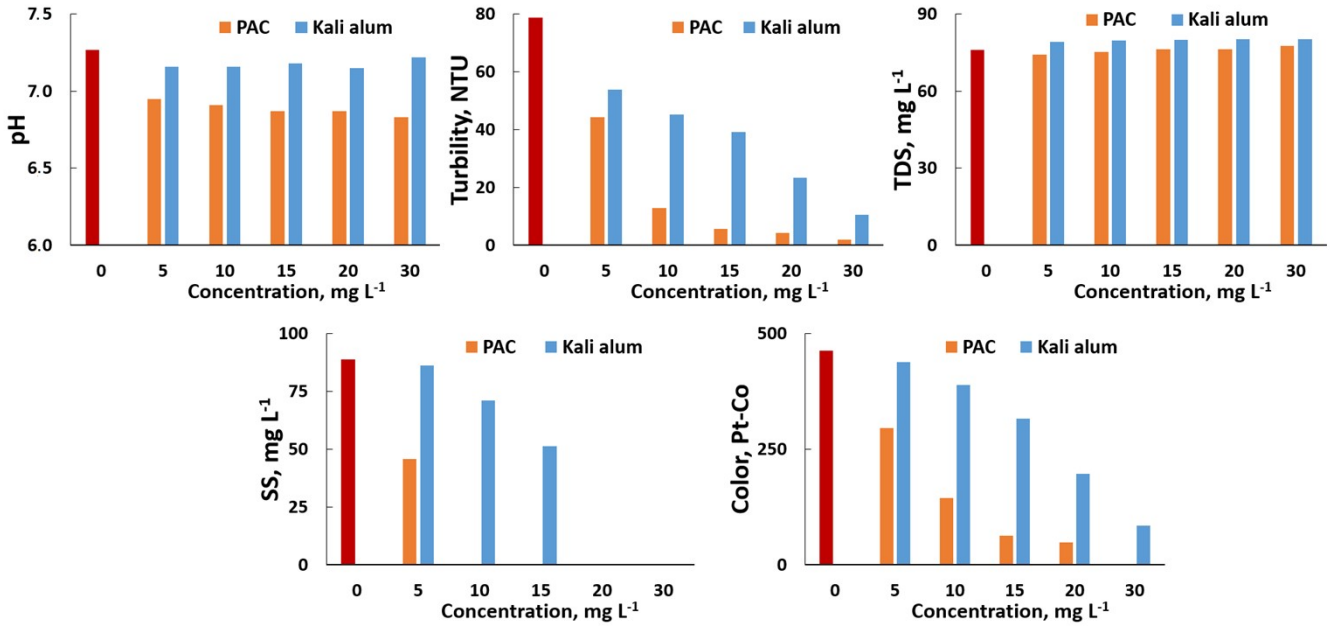

Figure S4. Floodwater quality indicators as functions of the coagulants concentrations at settling time of 10 min

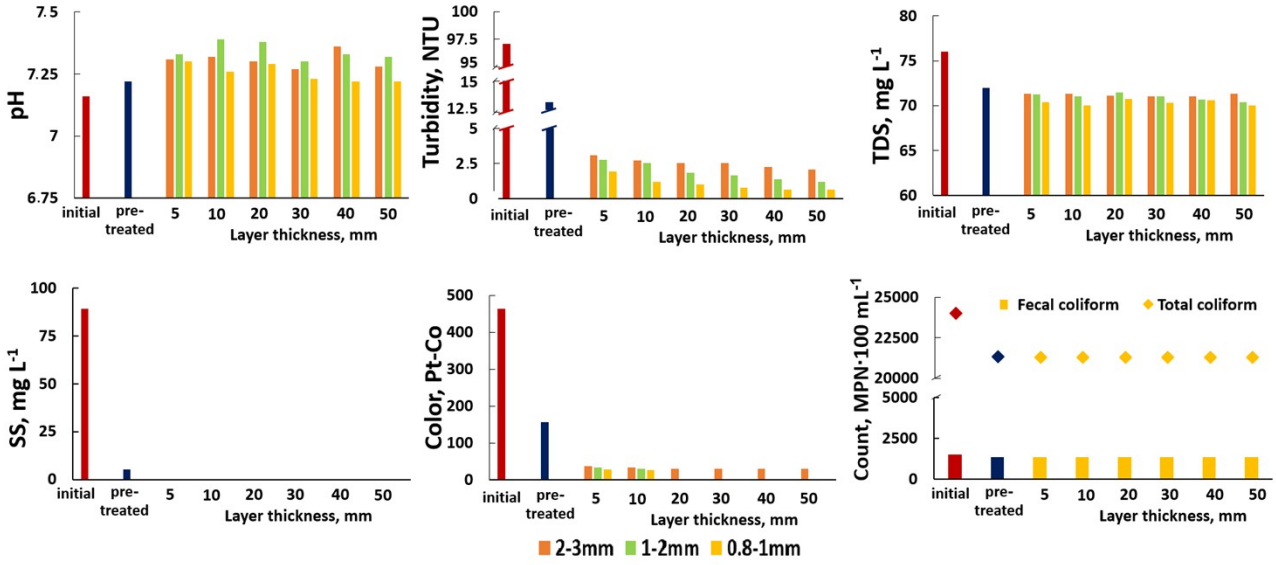

Figure S5. Floodwater quality indicators as functions of quartz sand layer thickness and particle size of quartz sand